REMARKS

Reconsideration and allowance are respectfully requested.

The claims stand rejected under 35 U.S.C. 103 based on Nuemiller and Balogh. This rejection is respectfully traversed.

In the ad hoc mode, a node A may receive HELLO or similar probing/scanning messages from a node B without node B receiving user packets from node A because certain kinds of hardware treat broadcast and uni-cast packets differently. The problem is that an ad hoc node may try to establish communication routes through the ad hoc network via one or more nodes that do not route packets. Another problem is that even when it is possible to route user packets to a neighboring node, the quality of the link between the neighboring nodes can be very poor, which may result in errors, retransmissions, lower throughput, and perhaps, route failure.

The technology in claims 1 and 4 relates to WLAN ad hoc networks. A node maintains a list or table of other nodes within the ad hoc network which can be used for forwarding messages within that network. The received signal strengths or qualities (e.g., SNR) of signals from nodes in the list are analyzed differently from the received signal strengths or qualities from nodes not on the routing node list. The received signal strength or quality from a listed node is allowed to vary somewhat within a predetermined range above a first threshold value to accommodate normal fluctuations associated with a moving node. But if the received signal strength or quality of the listed node falls below the first threshold level, then that node is removed from the list. In contrast, the received signal strength or quality of an unlisted node must exceed a second higher threshold level in order for that unlisted node to be added to the routing table. This arrangement

AMENDMENTS TO THE TITLE:

~~A method~~Method and apparatus for use in an ad-hoc WLAN system.

provides a robust system where the list of nodes in the ad hoc routing table is updated based on changing channel conditions to ensure good signal quality routing connections.

Nuemiller (US 7,180,875) teaches listing many nodes including nodes having a low SNR. See, for example, col. 6, lines 17-43. Listing "weak" nodes contrasts with what is described in claims 1 and 4 where the first node lists strong candidates in its ad hoc network routing table so that packets from the first node are routed to one or more "strong" neighboring nodes, each strong neighboring node in turn having a list of strong candidates neighboring it, and so forth. The Examiner admits that Nuemiller lacks "comparison of predetermined level/conditions."

Balogh's (US 2001/0024953) disclosure is nearly entirely devoted to infrastructure networks, and the main goal is to keep "the connection in the same network as long as possible." See 0005. Only a passing reference is made in 0035 that scanning of stored information sets may be done for ad-hoc mode networks with the comparison being of terminal identities to information sets. The abstract states:

> The access points may be grouped into networks and the terminal is arranged to collect information about available access points. The network names of the available access points are checked by the terminal. The first access point with the best connection attributes of the available access points with the same network name as the currently serving access point is selected. The second access point with the best connection attributes of the available access points with a different network name than the currently serving access point is also selected. One or more connection attributes of the first access point and the second access point are compared. The connection to the second access point is established if the differences between the compared connection attributes fulfill pre-determined conditions.

So Balogh focuses on selecting an access point for establishing a connection with an infrastructure network. A first access point with "the same network name as the currently serving access point" and a second access point with "a different network name" are selected.

Signal levels associated with the first and second access points are compared to see if they meet predetermined conditions, and if so, the user is prompted to indicate whether the user wants to establish a connection using the first access point with the same network name or the second access point with a different network name.

In contrast, claim 1 relates to maintaining a table of other nodes within the network which can be used for forwarding messages within an ad hoc network using certain criteria for adding and dropping nodes in the table. That is different than deciding which access point to use in order to access a network, which is what Balogh describes. Claim 1 uses two different comparison thresholds: a lower threshold when the node is listed in the table and a higher threshold otherwise. Balogh does not teach using two different thresholds based on whether a second ad hoc node is listed in the first node's message routing/forwarding table or not. The algorithm illustrated in Balogh's Figure 4 compares the signal level received from a first access point with that received from a second access point. The "access point with the highest signal level is the access point with the best connection attributes." See 0040. Ultimately, Balogh establishes a connection with a selected access point AP. See blocks 412 and 410 in Figure 4.

New claim 4 describes a first node in an ad-hoc Wireless Local Area Network (WLAN) that maintains a table of other nodes within the ad-hoc network which can be used for forwarding messages within the network. If the signal strength from a second node exceeds a first predetermined comparison level and the second node is already listed in the table maintained by the first node, the second node remains listed. Otherwise, its removed. On the other hand, if the second node is not listed in the table, the signal strength from the second node is compared to a second higher predetermined comparison level. In this situation, the second node is added to the table only if the signal strength exceeds the second higher predetermined comparison level.

These features are not present in Balogh's infrastructure network in which access points are selected for establishing a connection. Neither reference teaches maintaining an ad hoc network routing table using two different thresholds as claimed.

Nor does the Examiner explain how Balogh's access point selection for establishing a connection with a terminal will "effectively and efficiently handl[e] fading between mobile wireless user terminals...with minimal overhead and packet loss" in the Nuemiller system.

The application is in condition for allowance. An early notice to that effect is respectfully requested.

Respectfully submitted,

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